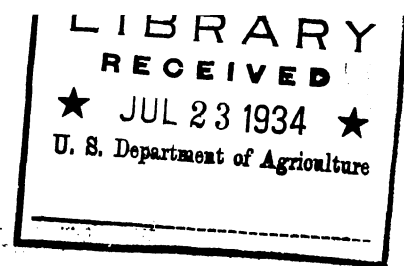


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UNITED STATES DEPARTMENT OF AGRICULTURE

WASHINGTON, D. C.

THE EXTENSION ANIMAL HUSBANDMAN

Issued quarterly by the Bureau of Animal Industry  
and Extension Service, Cooperating,  
C. D. Lowe, Senior Extension Animal Husbandman,  
K. F. Warner, Animal Husbandman in Meat Extension.

Serial No. 34 --

June, 1934

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## THE TWELFTH INTERNATIONAL VETERINARY CONGRESS

By John R. Mohler, Chief, Bureau of Animal Industry,  
United States Department of Agriculture

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The Twelfth International Veterinary Congress will meet in New York City at the Waldorf-Astoria Hotel, August 13-18 of this year. The event is noteworthy since this will be the first meeting of the Veterinary Congress in the United States, all previous ones having been held in Europe. Though primarily of veterinary character, the discussions will deal also with many topics of distinct interest to animal husbandry workers and others interested in production and marketing phases of the livestock industry.

### Organization and Activities

Readers of The Extension Animal Husbandman probably will be interested in a brief outline of the development of this international veterinary organization. The first session was held in Hamburg, Germany, in 1863 in response to sentiment among veterinarians for an opportunity to discuss the distribution, in different countries, of communicable diseases of animals and methods of control. Subsequent meetings were held in Vienna, Zurich, Brussels, Paris, Bern, Baden Baden, Budapest, and The Hague, followed by two in London, the last being in 1930.

The International Veterinary Congress, as the name implies, is an organization composed chiefly of officials and practitioners seeking to advance veterinary science and its application. There is a special provision also for admitting to membership veterinary students and others interested in the profession. It is anticipated that approximately 1,500 members of the profession, representing at least 61 nations, will participate in the forthcoming Congress at New York. The program during the 6 days of the session will consist of 2 general meetings and 18 sectional meetings. In addition, there will be special features, such as a clinic, radio broadcasts, and opportunity to inspect exhibits prepared for the event.

### Congress is Officially Sponsored

Though essentially of technical character, the International Veterinary Congress will be conducted under the patronage of high Government officials. President Franklin D. Roosevelt is patron and Secretary of Agriculture Henry A. Wallace is vice patron. The purposes of the Congress have been approved by the State Department, and the United States Department of Agriculture will be represented on the program by six members of its scientific staff.

### Papers are Broad in Scope

Besides dealing with important communicable diseases with special reference to their control and eradication, some of the discussions will relate to economic phases of animal production. Such topics include: The relation of veterinary science to animal breeding, veterinary control of the marketing of milk, sterility, new researches on infectious abortion, genetics, immunity against parasites, deficiency diseases, principles of feeding related to veterinary science, coccidiosis, and pullorum disease.

This partial list is sufficient to illustrate the desire of veterinarians to aid in reducing the hazards of animal production and otherwise contribute to the solution of livestock problems related to veterinary science.

### Publications, Broadcasts, and Exhibits

The proceedings of the Twelfth International Veterinary Congress will be printed, as in the past, in several convenient volumes, thereby making the papers and discussions available for further study by investigators and other interested persons.

In order that the public may have the opportunity of hearing some of the distinguished veterinary officials of the world, there will be two broadcasts of one-half hour each, one on August 14 and the other on August 16. The broadcasts will be carried by approximately 50 stations of the National Broadcasting Company during the usual Farm and Home Hour period. Both broadcasts will begin at 12.50 p.m., Eastern Standard Time, which will be 1 and 2 hours earlier in the central and mountain time belts, respectively. In addition, three short-wave stations will give international distribution to the same broadcasts. High foreign officials who have been asked to participate in these broadcasts are: Prof. Frederick T. G. Hobday, Principal and Dean of the Royal Veterinary College, London; Prof. D. Valentine Stang of the Veterinary College, Berlin; Prof. Alberto Ascoli of Superior Veterinary College, Milan, Italy; Prof. Dr. E. LeClainche, Director of the Bureau of Epizootics, Paris, France; and A. Fernandez Beyro, Director General of Livestock, Buenos Aires, Argentina. Talks which are given in a foreign language will be followed by English translations.

The United States Department of Agriculture is now preparing several exhibits to acquaint visiting delegates with the scope and character of the livestock industry of this country. Models, illustrations, and text will portray prominent features of research, regulatory and educational activities.

A considerable number of delegates probably will visit some of the research institutions, meat-packing establishments, and areas of livestock production. Such contacts will be encouraged. Through these various means it is expected that the Twelfth International Veterinary Congress will familiarize visitors with the technical and industrial advancement of various branches of the industry. In addition, the personal contacts and discussions of common problems, which the event provides, will serve to establish and perpetuate cordial international relations.

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### "A PASTURE HANDBOOK"

The conversion of crop land to pastures has become an important part of the agricultural program. Aside from the advantages of having land in pastures such as conservation of fertility of the soil, the prevention of destructive erosion and supplying feed to livestock in the cheapest possible form, it is entirely logical that agricultural production can be most logically affected by returning to pasture at least 40,000,000 acres of land now in cultivated crops, since such an area was plowed up during and shortly after the World War to meet the world-wide demand for food products from the United States.

This increased acreage of crop land, resulting from the plowing up of pastures is undoubtedly the largest single factor contributing to the surplus production of agricultural products in this country. Since the lands which should be put back in pasture are generally the poorer lands on the farms, pasture establishment and management presents many problems in the preparation of the soil, involving both fertilizers and mechanical treatments, seedings to meet various conditions, and management of the livestock to insure proper maintenance of the forage plants and the greatest practicable returns in the form of livestock maintenance and livestock production.

In other words, "The right grasses, the right legumes, proper mixture, inoculation, fertilization, careful use, -- all these and more are necessary to get and maintain good pastures." Such problems are treated in "A Pasture Handbook" in terms which should be of use not only to county agents, vocation teachers and other workers, but also to farmers who are in the habit of using publications and farm papers as guides in their farm practices. This bulletin, which is Miscellaneous Publication 194, may be obtained by addressing the Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C.

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MAKING CALVES INTO GOOD BEEF AT SEVEN AND ONE-HALF MONTHS  
OF AGE VERSUS AT ELEVEN MONTHS OF AGE

By E. W. McComas, Associate Animal Husbandman,  
Bureau of Animal Industry, U. S. Department of Agriculture.

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An experiment in methods of producing beef calves in the rough pasture land found in the Appalachian mountain region is being carried on at Tuckwiller Bros. farm near Lewisburg, W. Va., by the Animal Husbandry Division, Bureau of Animal Industry, and the West Virginia Agricultural Experiment Station. The first year's results furnish data for a comparison of the "creep-feeding" method of producing beef at weaning time with that of lot-fattening subsequent to weaning.

Thirty grade Hereford cows, bred in the summer of 1932 to a purebred Hereford bull and grazed on excellent quality but rough mountain pasture, were fed for 147 days during the winter, of 1932-1933 an economical wintering ration of corn silage, straw and cottonseed meal. (See Table 1). The cows were provided with a part of a barn and a lot for shelter during the winter and had access to pasture, though the latter did not supply any appreciable amount of grazing.

The cows were turned into the "Boundary" (the local term for an enclosed pasture) April 28, 1933 with 4 acres allotted to a cow with her calf.

On May 26 the cows and calves were divided as uniformly as possible into two groups (lot 1A and lot 1B). On that date the calves averaged 168 pounds live weight and were approximately 2 months old.

The calves in lot 1A had access in a creep, to a mixture of 8 parts cracked corn and 1 part cottonseed meal by weight, and consumed a total of 509.8 pounds of this mixture up to November 10 when they averaged 528 pounds a head live weight. Those in lot 1B did not receive any grain, but gained especially well, doubtless as a result of the very good growth of grass during that season. They averaged 478 pounds a head at weaning time when the first phase of the experiment closed on November 10.

At this time the creep-fed calves (lot 1A) sold in Baltimore

at \$6.00 a hundred pounds live weight, and the lot 1B calves were appraised as feeders at \$4.50 a hundred pounds. On a basis of the Baltimore sale price, and after deducting the market expense for the lot 1A calves, calves in lot 1A had an average farm value of \$27.73 whereas those in lot 1B at weaning time were worth \$21.51.

The calves in lot 1B were fattened in the dry lot for 112 days (November 10, 1933 to March 2, 1934) on 964 pounds of the corn and cottonseed meal mixture and 374 pounds of alfalfa hay per head. During this period they gained an average of 139 pounds and weighed 619 pounds at the end of the experiment when they possessed the same degree of finish displayed by the calves in lot 1A when they were marketed. They sold in Baltimore, Md., at an average of \$38.71 a head, which represented a value on the farm of \$33.58.

If feeds for wintering the cows, and for fattening the calves are charged at the local prices which prevailed last fall (1933), on a basis of 100 percent calf crop, the creep-feeding method (lot 1A) returned \$12.22 per head to pay for the use of the pasture and the investment in breeding stock and equipment, whereas the calves in lot 1B when fattened subsequent to weaning returned \$12.58 but consumed more than twice as much feed per head and went to market at 11 months of age instead of 7 1/2 months, the age of the lot 1A calves when marketed.

Table 1.-Comparison of Methods of Beef-Calf Production

Average wintering ration for breeding herd (147 days)		
Corn silage . . . . .	pounds	19.70
Straw . . . . .	"	6.70
Cottonseed meal . . . . .	"	.97
Amount charged for winter feed per cow $\frac{1}{2}$ . .	dollars	9.16
<hr/>		
Grazing season for calves, April 28, 1933 to Nov. 10, 1933 (196) days)	Lot 1A Supplement	Lot 1B No supplement
Calves . . . . .	14	15
Average initial weight, May 26, 1933, . . . pounds	168	168
" final weight at weaning, Nov. 10, 1933 "	528	478
" gain per calf . . . . .	360	310
" supplements per head for period (168 days):		
Shelled corn . . . . .	pounds 454.1	
Cottonseed meal . . . . .	" 55.7	
Amount charged for supplements per calf $\frac{1}{2}$ dollars	4.61	
Value of calf at farm, Nov. 10, 1933 . .	27.73	(21.51) $\frac{2}{2}$

Table 1.--Comparison of Methods of Beef-Calf Production (continued)

Lot fattening period subsequent to weaning (112 days)	Lot 1A Supplement	Lot 1B No supplement
Calves . . . . .	---	13
Average initial weight Nov. 10, 1933 . . . . . pounds	---	480
" final weight, Mar. 2, 1934 . . . . . "	---	619
" gain per head . . . . . "	---	139
Total feed per head for period:		
Grain mixture . . . . . "	---	964
Alfalfa hay . . . . . "	---	374
Amount charged for feed per head . . . . . dollars	---	10.84
Average value per head at the farm, Mar. 2, 1934	---	33.58
Farm value of lot 1A calf at weaning, Nov. 10 and of lot 1B calf when fat, March 2, less winter feed charges for dam and fattening feed charges for calves 1/	12.22	12.58

- 1/ Feed prices, alfalfa hay \$12. per ton; corn silage \$4. per ton;  
cottonseed meal \$20. per ton, shelled corn 50¢ per bushel,  
straw \$4. per ton.
- 2/ Appraised as feeders.

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#### MICHIGAN LAMB IMPROVEMENT, 1933

In 24 Michigan counties with 9,012 sheepmen, 474 docked and castrated their lambs, 334 used purebred rams, 409 dipped their flocks, 557 drenched their flocks three times and 601 sorted and graded their lambs, who did not do so in 1932. One hundred concrete dipped vats were in regular use.

Eighty-six percent of the growers docked and castrated, 48 percent used purebred rams, 28 percent dipped, 31 percent drenched three times (62 percent drenched at least once), and 35 percent sorted and graded lambs.

Three hundred twenty-two drenching and 182 dipping demonstrations were held in 1933, with 74,038 sheep being drenched and 56,356 dipped during these demonstrations.

---From Michigan Annual Report - 1933.

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## HUGHES COUNTY, OKLA., ANNUAL HORSE AND MULE SHOW

By Paul G. Adams, Extension Animal Husbandman.

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Interest in the production of better horses has been increasing rapidly in Oklahoma during the past few years and the interest in better mules has also shown a decided improvement during this time.

One of the counties in this State that has made some special effort to point out the advantage of furnishing power on the farm with horses and mules is Hughes County. As a part of this activity, L. J. McMakin of Holdenville, county agent for Hughes County, together with others who are interested in better horses, decided to hold a county horse and mule show in May of 1933. The first show attracted such attention and interest that it was decided to make this an annual event.

The second annual Hughes County horse show was held this year at the Robert McAlister farm six miles north of Holdenville on Wednesday, May 16. Classes were provided for purebred Percherons and draft geldings and mares. Classes were also provided for purebred jacks and mules. Robert McAlister, upon whose farm this show was held, was born in Washington County, Kentucky, and has an inherent love for good horses. He also believes in purebred livestock of every kind, and proudly displays a sign in his barn, "Purebred Sires Used Exclusively On This Farm," presented to him by the United States Department of Agriculture as a participant in the "Better Sires-Better Stock Crusade." Mr. McAlister keeps a herd of purebred Hereford cattle and purebred Poland China hogs in addition to his purebred Percherons.

George Koch, herdsman for Mr. McAlister, was very active in arranging the details of this show. A very large share of the credit for the success of this show, and that of a year ago, however, must go to Mrs. Ruby Ray Bankston, Mr. McAlister's daughter, who is now employed in the county agent's office at Holdenville. She was active in arranging the details of the premium list and in sending notices of the show to interested persons in a large number of counties in the State.

The exhibition of the entries began at 10 A.M., with Prof. W.L. Blizzard, head of the Animal Husbandry Department of the A. & M. College, serving as judge. Seventy-two entries were exhibited at the show, four of which were purebred jacks and four mule colts. Professor Blizzard discussed the classes as they were judged and gave much valuable information to the persons present who were interested in the production of horses.

Another event held during the day which created a great deal of interest in the use of horses was a pulling contest conducted by the extension animal husbandman and C. V. Phagan, extension agricultural engineer of the Oklahoma A. & M. College. Four entries, including one team of mules, participated in this contest. The equipment, which had been arranged on the previous afternoon consisted of a wide-tired wagon loaded with sand which, when weighed, showed a total load of 4,040 pounds.

As the initial trial, each team was allowed to pull the load with both front wheels locked. For the second trial, the hind wheels of the wagon were locked and the front wheels were freed. Since most of the load was over the rear wheels of the wagon this increased the tractive pull necessary to move the load very materially. On the third trial, all four wheels of the wagon were locked, and in this condition only two of the teams were able to move the load a distance of ten feet. In order for a team to qualify in any trial it was necessary to move the load a distance of 27 1/2 feet. The drivers were not allowed to use a whip under any circumstances, this giving each driver an opportunity to display his best horsemanship without the use of a whip. A team of Percheron geldings owned by Frank Steele was the winner of the contest. This team was one of the lightest in the contest. When a dynamometer was used to measure the load it showed that the tractive pull necessary to make the final trial was 1,550 pounds. The mule team won second place.

After the pulling contested was completed, demonstrations were given in the use of multiple hitches. These included a hitch showing the use of four horses hitched two and two tandem, a hitch using five head hitched three in front and two in the rear, and a six horse hitch in a three-three combination, which included three as a lead team and three at the plow. These were used to show the difference in side-draft between such hitches and the hitching of four horses abreast. This was one of the most convincing features of the demonstration, since the results showed, for example, that it took 27 percent more power to move the load when the horses were hitched four abreast than when they were hitched in a two-two combination tandem.

Approximately 800 people attended this year's horse show and the events held in connection with it. Horsemen from a large number of counties were in attendance, many of whom had driven distances of 100 miles, or more, to participate in the activities of the day.

## TAKING ACCOUNT IN THE HOG LOT

By George B. Byers, Grady Sellards and H. K. Gayle,  
University of Kentucky, Lexington.

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A rather old art, that of taking account, and one that does not always bear itself with a popular savor, in times like these, but one always returning ample dividends to those who use the device consistently. It was upon this premise that farm management, animal husbandry and the county agent borrowed leaves from each other's books of experience, and set about with a project in Union County, Kentucky, to ascertain what the hog raisers were doing, and how it was affecting them in a financial way.

Two years now we've been doing this, in a limited way, to be sure, but these investigations, even if only extensive enough to be merely indicative, have disclosed some enlightening and important revelations. A summary of the work just finished for the year 1933, including the records from 29 farms, shows a net return of \$5.96 a sow on seven of the farms, in contrast to an average net loss of \$11.51 a sow on eight other comparable farms. The profit group used two or more of what we dare to term "modern" practices included in the following list: Continuous full feeding, sanitation, and the raising of a relatively large percent of the pigs farrowed. The loss group used none of them.

The 29 farms had an average of 13 sows per farm and lost \$5.37 per sow. (Table 6). On the other hand nine sows on one farm where all three of these modern practices were used made an average net return of \$40. per sow. This indicates that a small number of brood sows properly handled can be made to yield a greater net income than a large number of brood sows poorly handled.

Table 1. Influence of Number of Practices Followed Upon Net Returns for 29 Herds of Hogs, Union County, Kentucky - 1933

Item	Practices followed*		
	Two or more	One	None
Number of herds . . . . .	7	14	8
" " sows per herd . . . . .	17.6	12.3	11.6
" " pigs raised per sow annually . . . . .	8.9	9.8	7.6
Pounds of pork produced per sow . . . . .	1896	1900	1795
Net returns - per 100 lbs. pork produced. . . . .	32¢	loss 54¢	loss 64¢
" " - per sow . . . . .	\$5.96	" \$10.20	" \$11.51

\*Continuous full feeding, swine sanitation, and 68 percent of pigs raised.

The seven farmers who followed two or more of the improved practices paid all costs other than management and sold their corn in the form of pork for 46 cents a bushel. In contrast to this, the eight farmers who did not follow any of these practices sold their corn for 28 cents per bushel.

### Feeding Practices

These farmers followed two definite feeding practices in addition to many commonly used miscellaneous practices. First, five of the farmers gave their hogs all the feed they would clean up twice a day from the time the pigs began cracking corn until they were fattened, ready for market. For the purpose of measurement, this is considered continuous full feeding. Second, 16 of them practiced full feeding during the last 60 to 90 days before marketing. This is considered finished on full feed. The remaining eight farmers followed commonly used miscellaneous practices.

The hogs fattened by continuous full feeding made a net return of 90 cents more for each hundredweight of gain than the hogs fattened by commonly used miscellaneous feeding practices. (Table 2). The continuous full-feeding group carried the sows and fattened a hog to 200 pounds on 12 bushels of corn in 254 days. The farmers using the full-feeding practices during the finishing period only used 15.4 bushels of corn, and required 280 days to produce a 200-pound hog. Those farmers who failed to follow any of these practices used 18.2 bushels of corn, and took 312 days to produce a 200-pound hog.

Table 2. Results Obtained by Farmers Using Various Feeding Practices for 29 Herds of Hogs in Union County, Kentucky - 1933.

Item	<u>Feeding practices followed</u>		
	<u>Continuous full-feeding</u>	<u>Finished on full feed</u>	<u>Miscellaneous</u>
Number of herds . . . . .	5	16	8
" " sows per herd . . . . .	20.9	11.5	12.5
" " pigs raised per sow . . . . .	9.1	9.0	9.0
Pounds of pork produced per sow . . . . .	1822	1870	1898
Percent following swine sanitation . . . . .	85	22	0
Feed cost - per hundred weight gain . . . . .	\$ 2.96	\$ 3.16	\$ 3.77
Net returns - per 100 lbs. pork produced . . . . .	23¢	loss 37¢	loss 67¢
Returns to corn - per bushel* . . . . .	45¢	32¢	29¢

\*After paying all costs other than management.

A larger percentage of the farmers in the continuous full-feeding group practiced swine sanitation than in either of the other groups. Thus, in part, sanitation influenced the difference between these feeding practices.

### Swine Sanitation

The use of one or more of such sanitary practices as cleaning the hog houses with hot lye water, scrubbing the sow, keeping the pigs on clean ground and avoiding mud holes and ponds made a difference of \$1.03 for each hundredweight of pork produced in favor of the farmers following sanitation. The farmers practicing swine sanitation fatten their hogs in about 60 days less time than the group failing to follow swine sanitation. Ten of the farmers who treated their hogs for worms rather than follow the sanitary practices lost 25 cents in net returns per hundredweight of pork produced while those practicing sanitation made 26 cents net return (Table 3). On the other hand the treating for worms resulted in a loss of only 25 cents per hundredweight in comparison to 77 cents' loss without treatment or swine sanitation.

Each 200-pound hog used 10.6 bushels of corn under sanitary conditions, 14.2 bushels with treatment for worms and 18.6 bushels without treatment or sanitation. Here again 68 percent of the group practicing swine sanitation also practiced continuous full feeding while 6 percent of the hogs treated for worms were on full feed continuously.

Table 3. Influence of Swine Sanitation and Treatment for Worms Upon Net Returns for 29 Herds of Hogs in Union County, Kentucky - 1933.

Item	Practices followed		
	One or more steps in sanitation	Worm treatment	None
Number of herds . . . . .	7	10	12
" " sows per herd . . . . .	18.6	10	13
" " pigs raised per sow . . . . .	8.4	10.4	8.4
Percent of pigs raised . . . . .	67	76	62
Pounds of pork produced per sow . . . . .	1825	2000	1810
Percent practicing continuous full feeding. . . . .	68	5	6
Feed cost - per hundredweight of gain . . . . .	\$ 2.79	\$ 3.12	\$ 3.77
Net returns - per 100 lbs. pork produced . . . . .	26¢	loss 25¢	loss 77¢
Returns to corn - per bu.* . . . .	45¢	35¢	28¢

\* After paying all costs other than management.

### Pigs Raised

Variation in death loss from farrowing to marketing age accounted for a difference of 86 cents in net returns per hundredweight of pork produced. These farmers who sold an average of 8 pigs from every 10 pigs farrowed made a net return of 8 cents per hundredweight (Table 4). In contrast those farmers who sold only 4 pigs out of every 10 pigs farrowed failed by 78 cents per hundredweight to pay for feeds and other costs.

This difference was not due to any one management factor alone but rather to an accumulation of small things such as keeping breeding dates in order to know the probable farrowing date, proper housing and timely care at farrowing. In other words, this is a case that indicates the importance of timeliness and care in doing the many little jobs about the hog lot.

Table 4. Relation of Percent of Pigs Raised to Net Returns for 29 Herds of Hogs in Union County, Kentucky - 1933.

Item	Percent of Pigs Raised		
	76 to 95	56 to 75	36 to 55
Number of herds . . . . .	9	16	4
" " sows per herd . . . . .	10.6	15.2	12.3
" " pigs farrowed per sow . . . . .	13	13.4	15
" " " raised per sow . . . . .	10.8	8.9	5.9
Percent of pigs raised . . . . .	83	67	40
Net returns - per 100 lbs. pork produced	8¢	loss 37¢	loss 78¢
Returns to corn - per bushel *	39¢	34¢	26¢

\*After paying all costs other than management.

#### How Does Your Hog Enterprise Compare With Other Producers?

In order that the 29 farmers who gave these cost and return figures, and others interested, could compare their quantities of feeds used, cost, income, net returns and efficiency factors with the average for the 29 herds, 9 high-return herds and 9 low-return herds, Tables 5 and 6 are presented.

Feed prices varied from farm to farm depending upon quality and distance to market. The farm price for corn averaged about 38 cents per bushel; wheat, 80 cents per bushel; oats, 25 cents per bushel; shorts, \$1.17 per hundredweight; tankage, \$1.57 per hundredweight; skimmilk, 19.9 cents per hundredweight; and pasture 17 cents a month per sow and pigs to weaning age or the equivalent.

Table 5. Feed Quantities Used for 29 Herds of Hogs in Union County, Ky.-1933.

Item	Average for			
	29 herds	Your herd	9 high-return herds	9 low-return herds
Number of sows per herd . . . . .	13.4	—	9.4	14.5
" " pigs raised per sow . . . . .	9.0	—	9.1	7.8
Pork produced per sow - pounds. . . . .	1864	—	2410	1644
Feed quantities - per 100 lbs. pork produced				
Corn, bus. . . . .	7.5	—	5.6	10.1
Small grain, lbs. . . . .	.1	—	.2	.1
Mill feed, lbs. . . . .	1.2	—	.7	2.2
Tankage, lbs. . . . .	6.3	—	6.2	6.9
Skimmilk, lbs. . . . .	15.0	—	4.2	8.4
Pasture, days . . . . .	70	—	56.1	72.0
Corn equivalent - bushels . . . . .	7.8	—	5.8	10.3

Table 6. Costs, Incomes, Net Returns and Efficiency Factors for 29 Herds of Hogs in Union County, Kentucky - 1933.

Item	Average for			
	29 herds	Your herd	9 high-return herds	9 low-return herds
Costs - per 100 lbs. pork produced:				
Pasture . . . . .	\$0.22	\$___	\$ 0.19	\$ 0.23
Other feed . . . . .	3.04	___	2.29	3.87
Total feed . . . . .	(3.26)	(___)	(2.48)	(4.10)
Man labor @ 10¢ per hour . . . . .	.19	___	.15	.21
Interest and taxes. . . . .	.09	___	.07	.11
Shelter and equipment . . . . .	.08	___	.05	.10
Veterinary and medicine . . . . .	.04	___	-	.02
Hauling charge . . . . .	.13	___	.15	.18
Miscellaneous (salt, mineral, etc.) . . . . .	.04	___	.03	.03
Gross cost	\$3.83	\$___	\$ 2.93	\$ 4.75
Incomes - per 100 lbs. pork produced:				
Sales and net increases . . . . .	\$3.52	\$___	\$ 3.53	\$ 3.58
Manure credit . . . . .	.02	___	.02	.02
Gross income . . . . .	\$3.54	\$___	\$ 3.55	\$ 3.60
Net returns - per 100 lbs. pork produced,				
	loss 29¢	___¢	gain 62¢	loss 1.15
Net returns - per sow . . . . .				
	loss 5.37	\$___	" 14.86	" 18.94
Efficiency factors:				
Percent following continuous full feeding	26	___%	47	0
" practicing swine sanitation	33	___%	67	9
" of pigs raised	67	___%	79	58
Average age of fat hogs sold - days	265	___	250	307
" weight of fat hogs sold, lbs.	188	___	208	192
" price per cwt. of hogs sold	\$3.61	\$___	\$3.69	\$3.54
Returns to corn - per bushel*	.34	___	.48	.25

\*After paying all costs other than management.

#### PERSONNEL NOTES

Dr. C. D. Lowe, senior extension animal husbandman, and K. F. Warner, animal husbandman in meat extension, have been drafted for an indefinite period into the Department's emergency drought relief service, which is being directed by Dr. E. W. Sheets, chief of the Animal Husbandry Division of the Department.

Hector McDonald resigned on April 30, 1934, as extension animal husbandman, Washington State College, to accept a position with the Range Livestock Credit Department of the Federal Intermediate Credit Bank at Spokane. His successor has not been named.

## MINERAL FEEDING

At the time last year's report was made a discussion of mineral feeding was given with the notation that up to that time it had been impossible to obtain the mineral recommended by the experiment station. During the present year arrangements have been made whereby the minerals are handled at centrally located points scattered over the State, with the results that 250 tons of mono-calcium phosphate have been sold in the State during the year. This amount of the phosphate will make 800 tons of the sale and phosphate mixture. In addition to this mono-calcium phosphate a great many of the ranchmen are still using bone meal or spent bone black to mix with their salt, and a rather large number are also using the di-calcium phosphate.

There has been a large amount of a product called "cal-carbo" sold to ranchmen over the State during the year. Many of these men bought this product thinking that it was a phosphate, when as a matter of fact it is only ground limestone, or calcium carbonate, and does not contain any phosphate. It sells at a price of about \$18. per ton, as compared to \$60. for the mono-calcium phosphate. We have made a special effort to acquaint ranchmen with the fact that this product is not a phosphate, and should be used in feed lots rather than as a supplement to salt on the range. The following extract taken from the report of the county agent of De Baca County gives some idea as to the satisfaction ranchmen are obtaining from the use of the mono-calcium phosphate.

"During the past year it has been proved definitely and conclusively that the mono-calcium phosphate, when fed in combination with loose salt, makes the expense of salting animals much more economical. There have been 12 different men using this mineral the past year who report that the saving on their salt bills amounts to from one-third to one-half of the normal bill per year. About 20 tons of this mixture have been used in the county during the past year, and it has been found that on the average stockmen can salt their animals a year for not to exceed 27 cents per head. This in comparison to about 40 cents to 45 cents per animal as is the case when ordinary salt is used, represents considerable saving when a large number of stock are taken into consideration. It marks another step toward advancement in livestock work in this county. Arrangements were made whereby a local dealer was urged to keep a supply of this mineral on hand."

One of the ranchmen who has been feeding the mineral in De Baca County weighed his yearling heifers on November 20. They weighed an average of 760 pounds per head, which was more than 100 pounds above what they had weighed any year before he began feeding the phosphate.

--From New Mexico Annual Report, 1933.

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## SHEEP EXTENSION PROGRAM FOR WEST VIRGINIA

By Benj. F. Creech, Animal Husbandry Specialist,  
West Virginia University, Morgantown.

About the only bright spot in 1933 in the field of animal husbandry in this State was the price received for wool and lambs by West Virginia sheepmen. The annual market lamb production in West Virginia during the past three years has been approximately 600,000 lambs. The greater number of these lambs are marketed as fat lambs when they are approximately five months old. The range lambs produced in the higher altitudes of the State are six to seven months old when marketed.

A part of the animal husbandry extension program is to encourage and assist the sheepmen to have their lambs fat and weighing from 75 to 85 pounds before selling or shipping to market. West Virginia sheepmen lose not less than half a million dollars annually on their lamb crop because they fail to get a large percent of their lambs fat and heavy enough before going to market.

There are four factors largely responsible for so many light and thin lambs. They are in the order of their importance: Improper nutrition, internal parasites, use of inferior rams, and small ewes.

The problem of nutrition is a difficult one to solve where lambs are finished on milk and grass, and especially in sections where grass is of inferior quality, or where the quantity of grass is not sufficient.

### Internal Parasites

Internal parasites are becoming of greater and greater economic importance to the sheep industry in West Virginia. By a cooperative agreement with a wholesale druggist, 23,260 ounces of copper sulphate were distributed to the sheepmen of the State in 1933. This was enough copper sulphate to give 464,200 head of mature sheep one dose. There were 811 sheepmen in 18 counties that received assistance in treating their farm flocks six or more times during 1933. The West Virginia Experiment Station recommends that the sheepmen treat their flocks with  $1\frac{1}{2}$  percent of copper sulphate at three-week intervals throughout the year. This practice where followed has been found to be quite effective

in holding in check the more important intestinal parasites. There are, however, always a few ewes in practically every flock which fail to respond to the treatment.

In recent years lung worms are causing considerable damage and loss to the sheep industry in the State. In connection with the Lamb Improvement Campaign, 82 sheep were posted and lungworms were found in 51 of the 82 head. These 51 sheep were located in 18 counties scattered throughout the State. Field workers have been giving demonstrations in the chloroforming of sheep having lung worms. The treatment is rather effective, but a small loss often occurs, due to pneumonia, especially if the sheep are weak or inclined to have colds at the time they are given the chloroform.

#### Regional Purebred Ram Sales

For eight consecutive years, in cooperation with the sheepmen and the West Virginia Purebred Sheep Breeders' Association, purebred ram sales have been conducted. Eight sales were held in 1933 and a total of 213 rams were sold, as compared with 195 rams sold in 1932. This year's sale included 84 Southdowns, 71 Shropshires, 42 Hampshires 11 Dorsets and 5 Cheviots.

Rams for the sales are consigned by the breeders and inspected on the farms before they are delivered to the sale. Rams not in a thrifty condition and poor specimens of the breeds are not accepted. When the rams are assembled for the various sales they are appraised by a committee and sold at private sale. This plan eliminates the possibility of speculation between buyer and seller and has worked more satisfactorily in West Virginia than the public auction.

These ram sales have been most helpful in encouraging a larger number of sheepmen to buy good purebred rams for market lamb production. They have been equally helpful in encouraging the purebred sheep breeders of the State to produce better rams for these consignments. The breeders have learned that if they have inferior rams they will not be accepted in the sales and hence may be difficult to dispose of to their neighbors, especially when these same neighbors have attended one of the regional sales and have had an opportunity to see good rams being sold for a reasonable price.

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## REPORT OF MISSISSIPPI PORK CURING PROGRAM

By Paul F. Newell, Extension Animal Husbandman.

Twenty-four ice plants and other cold storage establishments cured 857,729 pounds of pork for Mississippi farmers during the winter of 1933-34. Thirteen plants operated during the winter of 1932-33 and cured approximately 650,000 pounds of pork. Eleven plants started curing for the first time during the past season. Reports were not obtained from two plants operating during the past winter. One plant that operated during 1932-33 cured no pork the past season due to a re-building program and the construction of a modern curing room. The curing plants are well distributed over the State.

Splendid progress is being made in this work which insures pork curing weather for the farmer at all seasons of the year. Curing losses from souring have, in the aggregate, amounted to a large sum annually due to the fact that farmers have not been able to outguess the weather. There is no doubt that these curing plants will stimulate increased production of hogs on our farms since, through controlled temperatures, farmers now know that their hogs can be cured without taking chances on the souring hazard.

The Extension Service, through its Division of Animal Husbandry, is cooperating with the curing plants and farmers in teaching and demonstrating most desirable methods of slaughtering, cutting, curing, smoking, and the subsequent storage of the cured products. Demonstrations have been given at eighteen of the plants which are now operating and plans are being made to reach the remaining plants and a number of new plants during the coming season. The management of a majority of the plants now operating, indicate an intention to enlarge the capacity of the curing rooms in order to handle the demand for curing work.

The Extension Service is convinced that this is a very practical and useful program and will continue to emphasize it as the final phase of a part of the live-at-home program. These curing facilities afford the farmer an opportunity to save a highly perishable product which he has produced at considerable expense and one that is necessary to the pleasure and well being of his family.

Ice-chilled curing boxes are being used on a number of farms which are not accessible to curing plants. The Extension Service is desirous of assisting in extending both these plans which are calculated to go a long ways in making our farms more self-sustaining.

## 1933 ECONOMIES AND "EFFICIENCIES"

(Odd items from the annual reports of State workers)

### Missouri

In 1933, 1,028 purebred rams were placed, 121,310 sheep were treated for stomach worms, 410,380 lambs docked and castrated, 111,960 lambs were creep fed and 18,604 lambs sold on a graded basis.

### Nebraska

One hundred and eight demonstrations showing how to hitch horses properly attended by 6,104 farmers, have been held in this State. Swine sanitation demonstrations have been held on 750 farms. ~~11,100~~ One hundred ninety-three boys and girls fed and managed baby beebes in 4-H club projects in 1933.

### North Dakota

During 1933, 88 beef bulls, 207 boars and 193 rams were placed or replaced.

### Oklahoma

During 1933, assistance was given farmers in securing 182 purebred rams. County agents in 25 counties reported creep feeding (calves) on 131 farms or ranches, involving 4,425 calves. Two hundred ninety-four purebred beef bulls were placed.

4-H club members carried out projects in 75 counties with 5,797 pig club members, 1,933 baby-beef members and 267 lamb-club members. Total enrollment was 7,997 as against 6,520 in 1932 and 4,335 in 1931.

### Pennsylvania

Eighty percent of the growers were docking and castrating their lambs. Practically 100 percent was using paper twine for tying fleeces. The average clip in 1932 was 7.8 pounds, an increase of over 2 pounds during the last 15 years. In 1933, 705,000 pounds of wool were marketed through pools, which was about one-fifth of all wool produced in the State. Off-grade wool in such pools has been reduced from 13.5 percent to 3.4 percent.

### South Carolina

In 1933, 32 farmers were assisted in obtaining purebred bulls; 116 in obtaining purebred boars; and 22, in buying or exchanging purebred rams.

### Virginia

Last year, 142,890 market lambs were docked and castrated as compared to 103,647 in 1932. These were the figures for 22 counties in which the projects was conducted. These counties produced a total of 191,920 market lambs.

Stomach worm treatments for the same counties were given in 1933 to 124,004 sheep as compared with 92,909 in 1932. Thirty-six thousand eight hundred sixty-one lambs were creep-fed. Twenty-seven counties cooperated in marketing 941,027 pounds of wool which netted the growers, \$272,939.77.

#### Wisconsin

In 1933 at the Junior Livestock Exposition held at Madison, 256 exhibitors representing 25 counties exhibited 275 calves, 290 barrows and 125 lambs, all market animals.

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#### RECENT PUBLICATIONS

##### Federal

"A Pasture Handbook" by A. T. Semple, H. W. Vinall, G. R. Enlow, and T. E. Woodward. U.S.D.A. Miscellaneous Publication No. 194

"Determining the age of Farm Animals by their Teeth," by George W. Pope - U.S.D.A. Farmers' Bulletin 1721.

"Effect of Quantity and Kinds of Feed on Economy of Gains and Body Composition of Hogs," by N.R. Ellis and J.H. Zeller - U.S.D.A. Technical Bulletin 413.

"Experiment in Methods of Producing Beef Calves," by W.H. Black and E. W. McComas - U.S.D.A. (unnumbered) mimeograph leaflet.

"Brewery, Distillery, Vinegar, and Yeast By-Products for Feeding Livestock," by E. W. Sheets, A.T. Semple and J.B. Shepherd - U.S.D.A., A.H. Mimeograph No. 1.

"Segregating Baby Chicks at Hatching Time" - U.S.D.A., A.H. Mimeograph No.2.

##### State

"Feedlot Diseases of Lambs," by E.I. Newsom and F. Cross - Colorado Experiment Station Bulletin No. 409.

"Livestock Shipping Associations in Minnesota," by E.C. Johnson and J.B. McNulty - Minnesota Experiment Station Bulletin No. 302.

"Beef Cattle Production in Minnesota," by C.W. Crickman, G.A. Saltee, and W.H. Peters - Minnesota Experiment Station Bulletin No. 301.

"Efficiency Variations in Steers, a Proposed Record of Performance," by L.M. Winters and H. McMahon - Minnesota Experiment Station Technical Bulletin No. 94.

"The Feeding of Livestock," by A.G. Hogan - Missouri Experiment Station Bulletin No. 330.

"Management of Bluegrass Pastures in Missouri," by E. M. Brown and J. E. Comfort - Missouri Experiment Station Circular No. 175.

"Experimental Studies of Foot-Rot in Sheep," by H. Marsh and E.A. Tunnicliff - Montana Experiment Station Bulletin No. 285.

"Composition of Montana Feeds and Forages," by J. Green - Montana Experiment Station Bulletin No. 283.

"Small Grains and Supplements for Fattening Fall Pigs," by L. Vinke and B. Bergstedt - Montana Experiment Station Bulletin 284.

"Farm Sheep Facts," by M.A. Alexander and W.W. Derrick - Nebraska Experiment Station Circular No. 48.

"Grub in the Head in Sheep in Northeastern Nevada, Methods of Herding which Favored Injury and Methods of Range Management which Practically Eliminate Losses," by R. Dill - Nevada Experiment Station Bulletin No. 135.

"An Investigation of the Cause of the Stiff-Lamb Disease," by J.P. Willman, S. A. Asdell, and P. Olafson - New York Experiment Station Bulletin No. 603.

"Lamb Fattening Trials," by D. J. Griswold - North Dakota Experiment Station Bulletin No. 274.

"Meat on the Farm: Part 1, Pork, Slaughtering, Cutting and Curing," by P. F. Trowbridge and A. Severson - North Dakota Experiment Station Circular No. 47.

"Cattle Marketed in North Dakota, 1929-1930-31, and Some Factors Underlying their Production," by H.G. Anderson and A. H. Benton - North Dakota Experiment Station Bulletin No. 275.

"Meat on the Farm: Part 5, Cooking and Canning Meats," by E. Latzke - North Dakota Experiment Station Circular No. 51.

"The Feeding Value of Artificially Dried Young Grass, III," by O. M. Camburn - Vermont Experiment Station Bulletin No. 368.

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